

RELATIONSHIP BETWEEN THE NATIONAL UNIVERSITIES COMMISSION
RESOURCE ALLOCATION PARAMETERS USED IN ALLOCATING FUNDS
TO TEACHING AND LEARNING AND RESEARCH AND DEVELOPMENT
AND THE OUTCOMES OF FEDERAL UNIVERSITIES IN NIGERIA

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DEDICATION

I dedicate this work to my beloved family, whose understanding and patience gave me the strength to pursue this program. My wife, Aisha Dalhat, has been a great inspiration to me. Her love, support and encouragement gave me the strength and the courage to complete my journey. My son Muhammad Imad and my daughter Nana Fatima endured the absence of my fatherly love and care patiently, in support of this journey. I say thank you for believing in me. Your sacrifice is not in vain.

I also dedicate this work to my brother Dr Abdullahi Garba and my friend Alhaji Muhktar Abdulkadir (ADC), who supported and encouraged me and also looked after my family in my absence. You are true friends in deed.



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ABSTRACT

The National Universities Commission Resource Allocation Parameters were developed by the National Universities Commission (NUC), for the allocation of funds to all the federal universities in Nigeria. However, the outcomes of the universities in their core tasks of teaching and research have left much to be desired, considering the volume of funds allocated to them annually. The funding parameters were described as input driven and does not therefore consider the outcomes of the federal universities, especially in their core tasks of teaching and research. The basic aim of this study, therefore, was to examine the relationship between the NUC funding parameters with the outcomes of the federal universities in Nigeria. A mixed mode design was adopted by the study where qualitative data was first collected, analyzed and then, together with relevant literatures, used to develop a survey instrument for the quantitative phase of the study. The study surveyed 209 senior management staff of the federal universities in Nigeria, and the results were analyzed using the IBM SPSS for Windows and SEM-PLS3. Factor analysis was conducted to identify the number of factors for the study, from where the measurement and structural models were built to identify the relationship between the funding parameters and the outcomes of the federal universities. The findings revealed that there is a positive and a statistically significant relationship between academic support, academic facilities and academic research with the teaching outcomes of the federal universities, while only academic support and academic facilities showed a similar relationship with research outcomes. The study has thus been able to fill the knowledge gaps that exists in the relationship between the funding parameters used in allocating funds to teaching and research with the outcomes of the federal universities in Nigeria.

ABSTRAK

Suruhanjaya Universiti Kebangsaan (NUC) telah membangunkan parameter pengagihan pembiayaan dana bagi tujuan mengagihkan dana kepada semua universiti persekutuan di Nigeria. Walau bagaimanapun, pencapaian universiti masih lagi tidak menepati berbanding dengan jumlah dana yang diperuntukan setiap tahun. Sehubungan itu, terdapat keperluan bagi kajian ini untuk mengkaji parameter pembiayaan NUC dengan hasil pencapaian universiti persekutuan di Nigeria. Bagi tujuan tersebut, reka bentuk kajian mod bercampur telah digunakan bagi mencapai objektif kajian yang telah ditetapkan. Data kualitatif dikumpulkan terlebih dahulu, dianalisis, dan seterusnya digunakan untuk membangunkan instrumen kaji selidik untuk fasa kedua, setelah digabungkan dengan literatur yang relevan iaitu dengan menggunakan kaedah kuantitatif. Kajian ini dijalankan dengan melibatkan seramai 209 orang responden yang terdiri daripada kakitangan kanan pentadbiran di Universiti Persekutuan di Nigeria. Dapatan kajian ini seterusnya dianalisa menggunakan perisian IBM SPSS untuk Windows dan SEM-PLS3. Analisis faktor digunakan untuk mengenal pasti bilangan faktor konstruk, dari mana model pengukuran dan struktur dibina untuk mengenal pasti hubungan antara parameter pembiayaan dan pencapaian di peringkat universiti. Dapatan kajian mendapati pada keseluruhannya terdapat hubungan yang positif di antara parameter pembiayaan NUC dengan hasil pengajaran dan penyelidikan universiti persekutuan, walau bagaimanapun dapatan kajian juga mendapati terdapat beberapa hubungan yang didapati tidak signifikan secara statistik, terutamanya disebabkan oleh peruntukan yang tidak mencukupi kesan daripada parameter yang telah ditetapkan.

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LIST OF SYMBOLS AND ABBREVIATIONS

AGFI	Adjusted Goodness-of-Fit Index
AMOS	Analysis of Moment Structures
AR	Academic Research
ASUU	Academic Staff Union of Universities
AU	African Union
AVE	Average Variance Extracted
BMAS	Benchmarked Minimum Academic Standards
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CHEA	Council for Higher Education Association
CMV	Common Method Variance
CSF	Critical Success Factor
DT	Direct Teaching
DTLC	Direct Teaching and Laboratory Costs
EFA	Exploratory Factor Analysis
ETF	Education Tax Fund
FEC	Federal Executive Council
FFR	Formula Funding (R&D)
FFT	Formula Funding (T&L)
FME	Federal Ministry of Education
FMF	Federal Ministry of Finance
FUA	Federal University of Agriculture
FUT	Federal University of Technology
GFI	Goodness-of-Fit Index
HEFC	Higher Education Funding Council
HEI	Higher Education Institution
HKUGC	Hong Kong University Grants Committee

KPI	Key Performance Index
MI	Modification Indices
ML	Maximum Likelihood
NASS	National Assembly
NBTE	National Board for Technical Education
NCCE	National Council for Colleges of Education
NF	Academic facilities
NFI	Normed Fit Index
NNFI	Non-Normed Fit Index
NPE	National Policy on Education
NSITF	Nigeria Social Insurance Trust Fund
NUC	Nigeria Universities Commission
NUCRAP	Nigeria Universities Commission Resource Allocation Parameters
PI	Performance Indicators
PLS	Partial Least Squares
PTDF	Petroleum Trust Development Fund
QA	Quality Assurance
QAA	Quality Assurance Agency
R&D	Research and Development
RAE	Research Assessment Exercise
RMSEA	Root Mean Square Error of Approximation
RQF	Research Quality Framework
SEM	Structural Equation Modelling
SIWES	Students Industrial Work Experience Scheme
SPSS	Statistical Package for Social Sciences
SS	Academic Support Services
T&L	Teaching and Learning
TETFund	Tertiary Education Trust Fund
TLI	Tucker Lewis Index
UBEC	Universal Basic Education
UP	University Performance
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

1.1 Introduction

Funding is a major factor in the development and progress of Higher Educational Institutions (HEIs), as its absence or insufficiency, will not only be detrimental to the development of the institutions, but also to the quality of their graduates which ultimately will affect the nation's drive towards sustainable development (Bank, 2010; Ferreyra, Avitabile, & Paz, 2017). Salmi (2003), has rightly noted that higher education is fundamental to the construction of a knowledge economy and society in all nations. But this can only happen when the higher education institutions are adequately funded. The funds provided should not only pay for salaries and wages, but should also be enough to enable the institutions to carry out their core tasks, especially teaching and learning (T&L) and also research and development (R&D).

Higher education funding parameters have been in existence for a very long time, especially in the developed economies of the world, where they were developed out of the need to find an equitable method of allocating funds to public colleges and universities (Johnstone & Marcucci, 2010). Although HEI funding parameters may vary between nations, their basic structures are the same. They are used as objective procedures for estimating the future budgetary requirements of public HEIs, using ratios, rates etc. derived from cost studies and peer analysis (McKeown-Moak, 1999). These parameters also create incentives for growth and are used in setting national educational priorities (Johnstone & Marcucci, 2010).

In the past, Nigeria has a well-structured and a carefully planned higher education system that was recognized globally. But over the years, due to constant

Government interventions, political intrigues, corruption and lack of proper planning, this glory was lost (Saint, Hartnett, & Strassner, 2003). Due to these problems, the standard of education has fallen and the country is now ranked amongst the lowest in the world, in terms of both the quantity and quality of education of its citizens. The major reason for the fall in educational standards has been attributed to the inefficiency of the funding parameters used in distributing government grants to the federal universities for T&L and R&D (Olayiwola, 2012; Saint *et al.*, 2003).

The Federal Government provides funding to the federal universities, and other public higher institutions of learning through grants from its annual budgets. These universities are under the control of the National Universities Commission (NUC), who uses some parameters for allocating funds to the universities. However, these parameters used in the allocation have been described as incomprehensible (Adeyemi, 2011), to the extent that the universities are complaining about their efficiency in addressing the institutional funding needs of the universities (Adeyemi, 2011; Akinsanya, 2009; Olayiwola, 2012). This, according to Adeyemi (2011), coupled with the fact that the funds so provided are inadequate to meet their operational needs and priorities, ultimately leads to information asymmetries and goal conflicts (Kivistö & Zalyevska, 2015), as postulated by the Principal-Agent Theory (Agency Theory).

Funds are provided by the Federal Government, as a principal, to the federal universities (Agents), for the provision of qualitative education to qualified citizens. The federal universities accept these funds and apply or use their skills, information, qualifications, experiences and abilities, to provide qualitative education to their students, as required by the government. There is thus an implied contractual tie between the government and the universities (Kivistö, 2007; Kivistö & Zalyevska, 2015). Since the relationship between the contracting parties involves the allocation of tax payer's money, it is important for the principal to ensure that the contractual requirements have been fulfilled. It is also essential for the agents to establish that the principal has indeed delivered its own side of the contract, i.e. adequate funding.

As noted by Olayiwola (2012) and Saint *et al.* (2003), the Federal Government does not have the capacity to observe the quality of the outcomes produced by the universities in terms of their T&L and R&D activities. This lack of capacity to monitor the output of the agents by the principal, will ultimately lead to information asymmetries, as posited by (Kivistö, 2008; Kivistö & Zalyevska, 2015; Schiller & Liefner, 2007). In order to solve this problem therefore, the Federal Government

established the National Universities Commission (NUC), to monitor the outcomes produced by not only the federal universities, but the entire university education sector in Nigeria. The outline of the chapter is as shown in Figure 1.1.

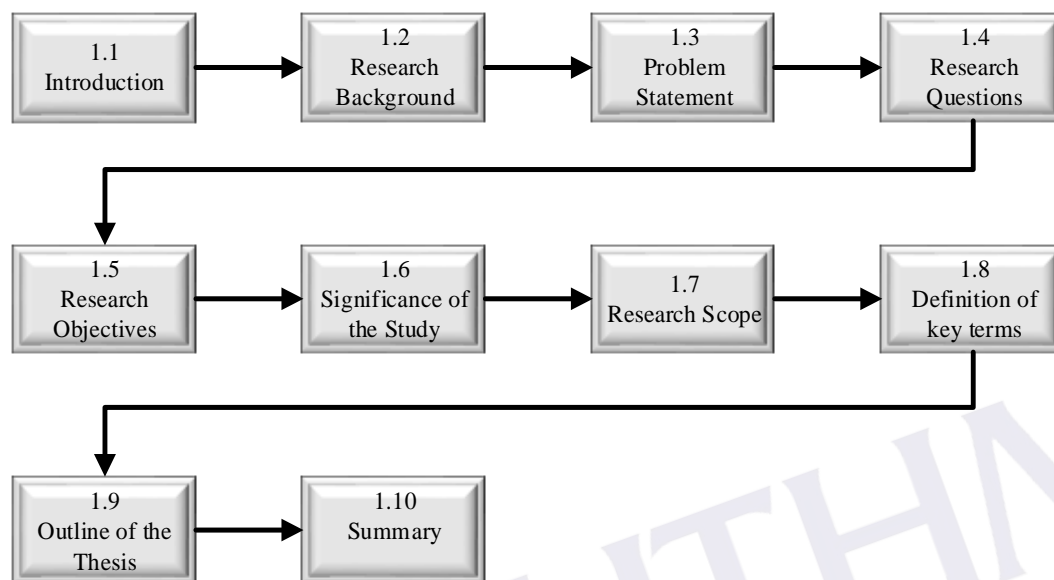


Figure 1.1: Outline of Chapter One

The organization of the chapter, as depicted in Figure 1.1, has shown that this introduction is followed by a discussion on the research background. The chapter also presents the problem statement of the study followed by the conceptual framework. The chapter then discusses the objectives of the study, its significance and the research approach deployed for the study. This introductory chapter also brings the outline of the research and a summary of the chapter.

1.2 Research background

Higher education funding parameters, in almost all nations, are closely tied to their respective government's policies on education (Jongbloed, 2008) and Africa is no exception as they consistently provide more than 90 percent of the total budgets of their HEIs (Albrecht & Zideman, 1992; Okebukola, 2015b). Funding requirements for higher education, has been on the rise unfortunately, in the past decade (Greer & Klein, 2010), due to its rapid expansion without a corresponding increase in funding allocations. Various models of funding HEIs have been evolved by various countries

to suite their different economic peculiarities. The funding parameters in the developed nations are somehow similar (Ahmad & Farley, 2013; Ferreyra *et al.*, 2017), through block grants which are usually being determined through negotiations, on a historical basis, via funding formulas or a combination of these three methods. U.S.A for example, due to its federalist state structure uses the formula model in some states while about twenty four states have adopted the use of performance-based model, whose success so far is making some more states to contemplate its use (Miao, 2012). Estermann, Pruvot and Claeys-Kulik (2013) and Dougherty, *et al.* (2016), noted that European countries also have some performance related elements in their funding systems via different mechanisms, mainly through formulae or performance contracts.

Creating a sustainable tertiary education financing strategy is key in the development of a solid tertiary education system, which entails: (1) mobilizing sufficient resources; (2) applying effective allocation parameters; and (3) equitable distribution of these resources (Okoro & Agugum, 2017; Salmi, 2003). There are, of course, huge variations in higher education funding practices worldwide. Stevens and Gebre-Medhin (2016), posits that while some practice a market based model where government provides minimal funds (e.g. USA), others, like Nigeria, practice the social model where the government undertakes the responsibility of funding the higher education system and also offers scholarships and grants to students (Furlong & Cartmel, 2009; Okebukola, 2015b).

The problems of higher educational institutions in the developing countries, especially in Africa, as noted by the World Bank, is that over the years there has been a gradual decline in the funding from government in real terms, due, in part, to their declining economies (Bank, 2010). In Zimbabwe for example, the country had to accept the use of multiple foreign currencies after the collapse of its local currency due to hyper-inflation (Kariwo, 2010). The economic problems in Africa and in most developing nations, have led to staff losses due to low salaries, poor working conditions, overstretched facilities and underfunded teaching and research activities. It was posited by Bank (2010) and Dougherty, Natow, Pheatt, and Reddy (2016), that the problems of education in Africa is brought about by the fallen standard of university education in the region due to dwindling financial resources in the midst of a rapidly growing enrolment.

Government funding of higher education institutions in Nigeria is as old as the higher education institutions themselves. When the University College Ibadan was

established in 1948, up to its gaining a university status in 1962, it was being funded by the then colonial administration (Oketch, 2016). While the colonial government of Nigeria provides seventy percent, the remaining thirty percent was being funded by the government of the United Kingdom (Okebukola, 2015b; Ukeje, 2002). Even with the establishment of the five full pledged universities between 1960 to 1970, funding has never been their problem until the Federal Government's take over in 1975. This has therefore gone to show that the first generation universities were adequately funded, to the extent that they received more than their budgetary requirements from their owner governments (Okuwa & Campbell, 2017).

In 1975, seven additional universities were established by the new military government of General Murtala Mohammed due to the need to improve access to higher education; with it came the transfer of all universities to the federal government, who took responsibility for their funding, planning and development. This period, according to Ukeje (2002), marked the beginning of the funding problems of the federal universities. The new universities, though have increased access, have negatively affected the overall funding to the federal universities, as they now have to share resources with the first generation universities (Bank, 2010). This made the NUC to introduce its funding formula parameters, the National Universities Commission Resource Allocation Parameters, (which is the subject of this study) to address and control the financial affairs of these federal universities (Okebukola, 2015b). These parameters, according to Bank (2010), deploy a normative approach to an input based budgeting for the federal universities.

In Nigeria, the National Universities Commission (NUC), was established as a buffer organization, to regulate the conduct of university education and to also advice the government on the funding needs of the federal universities. The commission is expected to receive block grant from the federal government and allocate it to the federally controlled universities according to the laid down formula or parameters approved by the Federal Executive Council (FEC) (Olayiwola, 2012). The parameters, as extracted for T&L and R&D from the NUC Resource Allocation Parameters (NUCRAP), are as presented in the table below:

Table 1.1: Parameters for recurrent grant calculations
(Adapted from Olayiwola (2012))

S/N	Heading	Description	As % of recurrent expenditure
1	Teaching & Learning	a. Direct Teaching b. Teaching Support c. Public Services d. Library e. Teaching & Research Equipment f. Staff Development & Training g. General Academic Expenditures	34.5% 1.6% 3.5% 5.0% 5.0% 2.3% 1.2%
2	Research & Development	h. Academic Research	5.0%
Sub-Total: Academic Expenditure			58.1%
3	Administration	i. Central Administration j. General Admin Expenditure k. Student Services l. Works and maintenance m. Health Services n. Retirement benefits	19.4% 13.1% 5.6% 2.1% 0.7% 1.0%
	Grand Total		100%

The effectiveness of the above parameters has been the major bone of contention in the HEIs circle and it is also the focus of this study. The parameters are based purely on NUCs opinions regarding the appropriate faculty requirements (Maringe & Ojo, 2017), therefore making them subjective. While research in higher education funding is receiving some attention in Nigeria recently (Akinsanya, 2009; Kofar-Sauri & Ahmad, 2017; Okebukola, 2010; Olayiwola, 2012; Wangenge-Ouma, 2011), etc. Such studies are mostly focused on the adequacy, or otherwise, of the funds allocated to the HEIs. There is a complete lack of research studies that examines the relationship between the NUC funding formula and the outcomes produced by the federal universities, especially with regards to their core tasks of T&L and R&D.

While Akinsolu (2010) and Wangenge-Ouma (2011) opined that Nigeria uses the incremental budgetary system to allocate funds to the federal universities, Olayiwola (2012) is of the view that the distribution method is driven by history, location and policy. The current allocation parameters tagged “National Universities Commission Resource Allocation Parameters” (NUCRAP) as posited by Akinsolu (2010), was designed in 1975 by the then Executive Secretary of the commission, Dr Abel Goubadia. These parameters has been described by some university administrators as being too technical and very complex to understand and operate, to the extent that they do not have confidence in it (Okuwa & Campbell, 2017; Olayiwola, 2012). Saint *et al.* (2003) have further opined that the allocation of funds to the federal

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